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MAY 15.

The President, Dr. LEIDY, in the chair.

Twenty-five persons present.

The following were presented for publication :—

“ *Pinus Koraiensis*,” by Josiah Hoopes.

“ On the Fishes of the Lakes of the Western Part of the Great Basin,” by Edw. D. Cope.

*Observations on Forsythia*.—Mr. THOMAS MEEHAN, at the meeting of the Botanical Section, May 14, referred to his communication to the Academy (December 29, 1868), in which he suggested that notwithstanding the strong specific differences between *Forsythia viridissima* and *F. suspensa*, he believed they must have had a common origin. *F. suspensa* has short styles and long stamens, broad lobes to the corolla, broadly-ovate, thin, glaucous, sometimes trifoliate, deeply serrate leaves, and makes a shrub of some ten feet high, with numerous slender, pendulous branches. *F. viridissima* is a stiff, erect bush, but of not half the height, with narrowly lanceolate, thick, bright green, lightly serrate leaves; flowers with narrow lobes, and the style long and the stamens short. *F. suspensa*, in cultivation, often produces abortive capsules; *F. viridissima* rarely, if ever. In the paper cited above, an account is given of the production of seed-vessels on *F. viridissima*, by using the pollen of *F. suspensa*. Though the seeds were not wholly perfect, a winged seed of one species was produced among the wingless ones of the other. The resultant impression from those observations was that in spite of what would be regarded as good specific differences, they are but dimorphic forms, referable to sexual peculiarities.

Three years ago, the usually seedless capsules of *F. suspensa* produced a number of good seeds, which were sown. This season thirty-four flowered. The leaves and general habit of these plants present every shade of gradation between *F. suspensa* and *F. viridissima*; some of the leaves of the latter being even much more slender than those of the original species. The flowers also present in the larger number of cases the slender lobes of the *F. viridissima*; some with the lobes recurved laterally to such an extent as to seem much narrower than they are.

The most interesting fact in connection with this is the sexual characteristics. Of the thirty-four plants, raised from a parent having a short style and long stamens, only four have retained this parental character, but have assumed that belonging to the form *viridissima*.

Some interesting questions are suggested by these observations :

The fact that *F. suspensa* makes abortive capsules freely, and *F. viridissima* rarely, though it has the best developed pistil, indicates that fertility is dependent on the potency of the pollen; and this is confirmed by the production of capsules on *F. viridissima* when the pollen of *F. suspensa* was applied:

The fact that the speaker has had both forms growing on his grounds for many years, without any seed-vessel appearing on *F. viridissima*, except in the case cited, shows that it is not likely to be cross-fertilized through insect agency.

In the fully fertile case of *F. suspensa*, the plants of *F. viridissima* were fully four hundred feet away; and the suggestion of inter-crossing between these forms, considered in connection with the points previously made, seems to place hybridization out of the question.

We may conclude, therefore, that these two supposed species are but sexually dimorphic forms of one; and we have also the curious fact that, in this case, notwithstanding the presumable influence of the law of heredity, the strongly masculine tendency of the parent, as indicated by the highly developed stamens, the potency of its pollen on the *F. viridissima*, the power to almost perfect seeds in partially developed seed-vessels generally, and the actual perfection in one year, notwithstanding the imperfectly developed pistil, should have had to give way to the female tendency in the offspring to such a great degree as to leave only four out of thirty-four to represent the parent.

*Influence of Circumstances on Heredity.*—MR. THOMAS MEEHAN referred to the fact that seed of the purple-leaved variety of *Berberis vulgaris*, collected from plants growing near Philadelphia, reproduced the purple-leaved peculiarity to an extent which it could not do more perfectly if the variety were a true species. In a bed of seedlings, containing on an estimate one thousand plants, there were only two reversions to the original green-leaved condition. Two years ago, he had been given, by Prof. C. S. Sargent, some seeds of ligneous plants, sent to him from some European Botanical Garden, and of thirty seedlings planted only two are dark purple as in the parent.

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MAY 22.

Rev. Dr. H. C. McCook, Vice-President, in the chair.

Forty persons present.

A paper entitled "A Revision of the Species of Gerres found in American Waters," by B. W. Evermann and Seth E. Meek, was presented for publication.